

LOUISIANA

REPORT: PERCENT OF ORDERS IN JEOPARDY

Measurement No. 1	RESIDENTIAL	
	CLEC AGGREGATE	
REPORTING PERIOD	Total Orders in Jeopardy	% of Orders in Jeopardy
Mar-98	NA	NA
Apr-98	NA	NA
May-98	6	0.14%
Jun-98	5	0.04%
Jul-98	5	0.04%
Aug-98	20	0.12%
Sep-98	27	0.18%
Oct-98	8	0.04%
Nov-98	4	0.01%
Dec-98		
Average		0.06%

Measurement No. 1	BUSINESS	
	CLEC AGGREGATE	
REPORTING PERIOD	Total Orders in Jeopardy	% of Orders in Jeopardy
Mar-98	NA	NA
Apr-98	NA	NA
May-98	0	0.09%
Jun-98	1	0.07%
Jul-98	1	0.06%
Aug-98	1	0.07%
Sep-98	2	0.13%
Oct-98	2	0.18%
Nov-98	0	0.00%
Dec-98		
Average		0.10%

NOTE: Jeopardy not measured until May, 1998

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REPORT: PERCENT OF ORDERS IN JEOPARDY

Measurement No. 1	UNBUNDLED NETWORK ELEMENTS	
	CLEC AGGREGATE	
REPORTING PERIOD	Total Orders in Jeopardy	% of Orders in Jeopardy
Mar-98	NA	NA
Apr-98	NA	NA
May-98	NA	NA
Jun-98	NA	NA
Jul-98	NA	NA
Aug-98	NA	NA
Sep-98	4	2.58%
Oct-98	2	0.97%
Nov-98	1	0.72%
Dec-98		
Average		1.40%

Measurement No. 1	SPECIALS	
	CLEC AGGREGATE	
REPORTING PERIOD	Total Orders in Jeopardy	% of Orders in Jeopardy
Mar-98	NA	NA
Apr-98	NA	NA
May-98	NA	NA
Jun-98	NA	NA
Jul-98	NA	NA
Aug-98	0	0.00
Sep-98	0	0.00
Oct-98	0	0.00
Nov-98	0	0.00
Dec-98		
Average		

NOTE: UNE and Specials not measured until September, 1998

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REPORT: PERCENT MISSED INSTALLATION APPOINTMENTS

Measurement No. 1	UNE DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Total Count < 10 Circuits	% Missed Due Dates
Mar-98	0	3	0.00%
Apr-98	0	9	0.00%
May-98	0	12	0.00%
Jun-98	4	16	25.00%
Jul-98	4	55	7.30%
Aug-98	13	57	22.80%
Sep-98	13	64	20.30%
Oct-98	15	93	16.13%
Nov-98	4	62	6.45%
Dec-98			
Average			14.29%

Measurement No. 1	UNE DESIGN: NO-DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Total Count < 10 Circuits	% Missed Due Dates
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	0	0.00%
Jun-98	0	0	0.00%
Jul-98	0	0	0.00%
Aug-98	0	0	0.00%
Sep-98	0	0	0.00%
Oct-98	0	0	0.00%
Nov-98	0	0	0.00%
Dec-98			

Average

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REPORT: PERCENT MISSED INSTALLATION APPOINTMENTS

Measurement No. 1	UNE NON - DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Total Count < 10 Circuits	% Missed Due Dates
Mar-98	0	452	0.00%
Apr-98	1	28	3.60%
May-98	0	16	0.00%
Jun-98	0	35	0.00%
Jul-98	3	57	5.30%
Aug-98	3	45	6.70%
Sep-98	2	64	3.10%
Oct-98	3	85	3.50%
Nov-98	1	43	2.30%
Dec-98			
Average			3.49%

Measurement No. 1	UNE NON-DESIGN: NO DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Total Count < 10 Circuits	% Missed Due Dates
Mar-98	0	9	0.00%
Apr-98	0	1	0.00%
May-98	0	2	0.00%
Jun-98	0	0	0.00%
Jul-98	0	4	0.00%
Aug-98	0	9	0.00%
Sep-98	0	33	0.00%
Oct-98	5	37	13.51%
Nov-98	1	38	2.63%
Dec-98			
Average			4.51%

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REPORT: PERCENT MISSED INSTALLATION APPOINTMENTS

Measurement No. 1	UNE LOOPS WITH LNP - DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Orders Completed	% Missed Due Dates
Mar-98			
Apr-98			
May-98			
Jun-98			
Jul-98			
Aug-98			
Sep-98			
Oct-98			
Nov-98			
Dec-98			
Average			

Measurement No. 1	UNE LOOPS WITH LNP - NON - DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Orders Completed	% Missed Due Dates
Mar-98			
Apr-98			
May-98			
Jun-98			
Jul-98			
Aug-98			
Sep-98			
Oct-98			
Nov-98			
Dec-98			
Average			

NOTE: Not measured
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REPORT: PERCENT MISSED INSTALLATION APPOINTMENTS

Measurement No. 1	UNE DESIGN: DISPATCH (>10 CIRCUITS)		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Total Count < 10 Circuits	% Missed Due Dates
Mar-98	0	0	0.00%
Apr-98	0	1	0.00%
May-98	0	0	0.00%
Jun-98	0	0	0.00%
Jul-98	0	1	0.00%
Aug-98	0	1	0.00%
Sep-98	0	0	0.00%
Oct-98	0	0	0.00%
Nov-98	0	0	0.00%
Dec-98			
Average			

Measurement No. 1	UNE DESIGN: NO-DISPATCH (>10 CIRCUITS)		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Total Count < 10 Circuits	% Missed Due Dates
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	0	0.00%
Jun-98	0	0	0.00%
Jul-98	0	0	0.00%
Aug-98	0	0	0.00%
Sep-98	0	0	0.00%
Oct-98	0	0	0.00%
Nov-98	0	0	0.00%
Dec-98			
Average			

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REPORT: PERCENT MISSED INSTALLATION APPOINTMENTS

Measurement No. 1	UNE NON - DESIGN: DISPATCH (>10 CIRCUITS)		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Total Count < 10 Circuits	% Missed Due Dates
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	0	0.00%
Jun-98	0	0	0.00%
Jul-98	0	1	0.00%
Aug-98	0	0	0.00%
Sep-98	0	0	0.00%
Oct-98	0	0	0.00%
Nov-98	0	0	0.00%
Dec-98			

Average

Measurement No. 1	UNE NON-DESIGN: NO DISPATCH (>10 CIRCUITS)		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Total Count < 10 Circuits	% Missed Due Dates
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	0	0.00%
Jun-98	0	0	0.00%
Jul-98	0	0	0.00%
Aug-98	0	0	0.00%
Sep-98	0	0	0.00%
Oct-98	0	0	0.00%
Nov-98	0	0	0.00%
Dec-98			

Average

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REPORT: PERCENT MISSED INSTALLATION APPOINTMENTS

Measurement No. 1	UNE LOOPS WITH LNP - DISPATCH (>10 CIRCUITS)		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Orders Completed	% Missed Due Dates
Mar-98			
Apr-98			
May-98			
Jun-98			
Jul-98			
Aug-98			
Sep-98			
Oct-98			
Nov-98			
Dec-98			

Average

Measurement No. 1	UNE LOOPS WITH LNP - NON - DISPATCH (>10 CIRCUITS)		
	CLEC AGGREGATE		
REPORTING PERIOD	Total Missed Appts	Orders Completed	% Missed Due Dates
Mar-98			
Apr-98			
May-98			
Jun-98			
Jul-98			
Aug-98			
Sep-98			
Oct-98			
Nov-98			
Dec-98			

Average

NOTE: Not measured
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**LOUISIANA
REPORT: PERCENT PROVISIONING TROUBLES WITHIN 30 DAYS**

Measurement No. 1	UNE DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98	2	4	50.00%
Apr-98	0	4	0.00%
May-98	0	36	0.00%
Jun-98	2	53	3.77%
Jul-98	7	48	14.58%
Aug-98	25	157	15.92%
Sep-98	13	144	9.03%
Oct-98	8	154	5.19%
Nov-98	14	196	7.14%
Dec-98			
Average			8.92%

Measurement No. 1	UNE DESIGN: NO - DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98	0	4	0.00%
Apr-98	0	4	0.00%
May-98	0	36	0.00%
Jun-98	2	53	3.77%
Jul-98	1	48	2.08%
Aug-98	1	157	0.64%
Sep-98	8	144	5.56%
Oct-98	1	154	0.65%
Nov-98	2	196	1.02%
Dec-98			
Average			1.88%

LOUISIANA
REPORT: PERCENT PROVISIONING TROUBLES WITHIN 30 DAYS

Measurement No. 1	UNE NON - DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98	0	16	0.00%
Apr-98	0	454	0.00%
May-98	0	28	0.00%
Jun-98	1	29	3.45%
Jul-98	0	66	0.00%
Aug-98	3	127	2.36%
Sep-98	0	127	0.00%
Oct-98	0	136	0.00%
Nov-98	1	192	0.52%
Dec-98			
Average			0.43%

Measurement No. 1	UNE NON-DESIGN: NO DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98	0	2	0.00%
Apr-98	0	8	0.00%
May-98	0	2	0.00%
Jun-98	0	2	0.00%
Jul-98	0	4	0.00%
Aug-98	0	19	0.00%
Sep-98	1	11	9.09%
Oct-98	5	46	10.87%
Nov-98	2	41	4.88%
Dec-98			
Average			5.93%

**LOUISIANA
REPORT: PERCENT PROVISIONING TROUBLES WITHIN 30 DAYS**

Measurement No. 1			
UNE DESIGN: DISPATCH (>10 CIRCUITS)			
CLEC AGGREGATE			
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	15	0.00%
Jun-98	0	0	0.00%
Jul-98	0	0	0.00%
Aug-98	0	1	0.00%
Sep-98	0	10	0.00%
Oct-98	0	0	0.00%
Nov-98	0	0	0.00%
Dec-98			

Average

Measurement No. 1			
UNE DESIGN: NO - DISPATCH (>10 CIRCUITS)			
CLEC AGGREGATE			
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	15	0.00%
Jun-98	0	0	0.00%
Jul-98	0	0	0.00%
Aug-98	0	1	0.00%
Sep-98	0	10	0.00%
Oct-98	0	0	0.00%
Nov-98	0	0	0.00%
Dec-98			

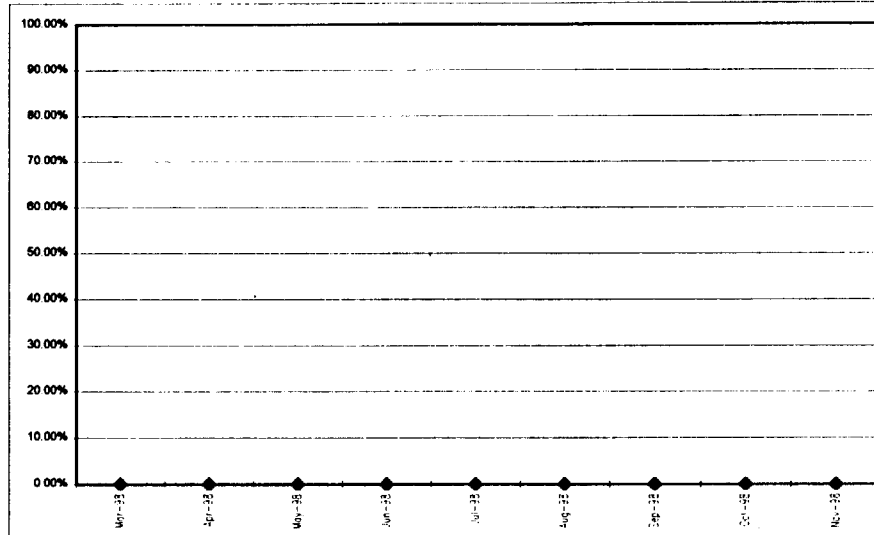
Average

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REPORT: PERCENT PROVISIONING TROUBLES WITHIN 30 DAYS

Measurement No. 1	UNE NON - DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	1	0.00%
Jun-98	0	0	0.00%
Jul-98	0	0	0.00%
Aug-98	0	2	0.00%
Sep-98	0	1	0.00%
Oct-98	0	0	0.00%
Nov-98	0	0	0.00%
Dec-98			

Average



Measurement No. 1	UNE NON-DESIGN: NO DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	0	0.00%
Jun-98	0	0	0.00%
Jul-98	0	0	0.00%
Aug-98	0	0	0.00%
Sep-98	0	0	0.00%
Oct-98	0	0	0.00%
Nov-98	0	0	0.00%
Dec-98			

Average

**LOUISIANA
REPORT: PERCENT PROVISIONING TROUBLES WITHIN 30 DAYS**

Measurement No. 1	UNE LOOPS WITH LNP: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98			
Apr-98			
May-98			
Jun-98			
Jul-98			
Aug-98			
Sep-98			
Oct-98			
Nov-98			
Dec-98			
Average			

Measurement No. 1	UNE LOOPS WITH LNP: NO DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Prv Trbls w/in 30 days	Total Prv Trbls	% Prv Trbls, 30 days
Mar-98			
Apr-98			
May-98			
Jun-98			
Jul-98			
Aug-98			
Sep-98			
Oct-98			
Nov-98			
Dec-98			
Average			

NOTE: Not measured
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REPORT: PERCENT MISSED REPAIR APPOINTMENTS

Measurement No. 1	UNE - DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Missed Due Dates	Number of Trouble Reports	% Missed Due Dates
Mar-98	NA	NA	NA
Apr-98	NA	NA	NA
May-98	NA	NA	NA
Jun-98	NA	NA	NA
Jul-98	NA	NA	NA
Aug-98	2	37	5.41%
Sep-98	1	22	4.55%
Oct-98	0	22	0.00%
Nov-98	6	26	23.08%
Dec-98			
Average			2.80%

Measurement No. 1	UNE - DESIGN: NO DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Missed Due Dates	Number of Trouble Reports	% Missed Due Dates
Mar-98	NA	NA	NA
Apr-98	NA	NA	NA
May-98	NA	NA	NA
Jun-98	NA	NA	NA
Jul-98	NA	NA	NA
Aug-98	0	14	0.00%
Sep-98	0	5	0.00%
Oct-98	1	3	33.33%
Nov-98	0	1	0.00%
Dec-98			
Average			4.35%

NOTE: Not measured until August
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REPORT: PERCENT MISSED REPAIR APPOINTMENTS

Measurement No. 1	UNE NON - DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Missed Due Dates	Number of Trouble Reports	% Missed Due Dates
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	2	0.00%
Jun-98	1	1	100.00%
Jul-98	2	9	22.22%
Aug-98	0	1	0.00%
Sep-98	0	1	0.00%
Oct-98	6	8	75.00%
Nov-98	0	4	0.00%
Dec-98			
Average			34.62%

Measurement No. 1	UNE NON-DESIGN: NO DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Missed Due Dates	Number of Trouble Reports	% Missed Due Dates
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	1	0.00%
Jun-98	0	1	0.00%
Jul-98	1	9	11.11%
Aug-98	3	3	100.00%
Sep-98	0	2	0.00%
Oct-98	5	6	83.33%
Nov-98	9	13	69.23%
Dec-98			
Average			51.43%

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REPORT: PERCENT REPEAT TROUBLES W/I 30 DAYS

Measurement No. 1	UNE DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Repeat Troubles w/in 30 days	Number of Troubles	% Repeat Troubles w/in 30 days
Mar-98	0	1	0.00%
Apr-98	0	2	0.00%
May-98	0	1	0.00%
Jun-98	2	9	22.22%
Jul-98	2	20	10.00%
Aug-98	1	37	2.70%
Sep-98	1	22	4.55%
Oct-98	2	22	9.09%
Nov-98	2	26	7.69%
Dec-98			
Average			7.14%

Measurement No. 1	UNE DESIGN: NO - DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Repeat Troubles w/in 30 days	Number of Troubles	% Repeat Troubles w/in 30 days
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	0	0.00%
Jun-98	0	2	0.00%
Jul-98	0	0	0.00%
Aug-98	2	14	14.29%
Sep-98	0	5	0.00%
Oct-98	0	3	0.00%
Nov-98	0	1	0.00%
Dec-98			
Average			8.00%

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REPORT: PERCENT REPEAT TROUBLES W/ 30 DAYS

Measurement No. 1	UNE NON-DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Repeat Troubles w/in 30 days	Number of Troubles	% Repeat Troubles w/in 30 days
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	1	2	50.00%
Jun-98	1	1	100.00%
Jul-98	2	9	22.22%
Aug-98	0	1	0.00%
Sep-98	0	1	0.00%
Oct-98	2	8	25.00%
Nov-98	0	4	0.00%
Dec-98			
Average			23.08%

Measurement No. 1	UNE NON-DESIGN: NO - DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Repeat Troubles w/in 30 days	Number of Troubles	% Repeat Troubles w/in 30 days
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	1	0.00%
Jun-98	0	1	0.00%
Jul-98	1	9	11.11%
Aug-98	0	3	0.00%
Sep-98	1	2	50.00%
Oct-98	0	6	0.00%
Nov-98	0	13	0.00%
Dec-98			
Average			5.71%

LOUISIANA

REPORT: CUSTOMER TROUBLE REPORT RATE

Measurement No. 1	UNE DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Lines	Number of Troubles	% Trouble Report Rate
Mar-98	14	2	14.29%
Apr-98	66	1	1.52%
May-98	118	3	2.54%
Jun-98	149	9	6.04%
Jul-98	298	20	6.71%
Aug-98	437	37	8.47%
Sep-98	598	22	3.68%
Oct-98	805	22	2.73%
Nov-98	946	26	2.75%
Dec-98			
Average			4.14%

Measurement No. 1	UNE DESIGN: NO - DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Lines	Number of Troubles	% Trouble Report Rate
Mar-98	14	0	0.00%
Apr-98	66	0	0.00%
May-98	118	1	0.85%
Jun-98	149	2	1.34%
Jul-98	298	0	0.00%
Aug-98	437	14	3.20%
Sep-98	598	5	0.84%
Oct-98	805	3	0.37%
Nov-98	946	1	0.11%
Dec-98			
Average			0.76%

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REPORT: CUSTOMER TROUBLE REPORT RATE

Measurement No. 1	UNE NON - DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Lines	Number of Troubles	% Trouble Report Rate
Mar-98	344	0	0.00%
Apr-98	233	0	0.00%
May-98	344	2	0.58%
Jun-98	392	1	0.26%
Jul-98	563	9	1.60%
Aug-98	695	1	0.14%
Sep-98	745	1	0.13%
Oct-98	2883	8	0.28%
Nov-98	3031	4	0.13%
Dec-98			
Average			0.28%

Measurement No. 1	UNE NON-DESIGN: NO DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Lines	Number of Troubles	% Trouble Report Rate
Mar-98	344	0	0.00%
Apr-98	233	0	0.00%
May-98	344	1	0.29%
Jun-98	392	1	0.26%
Jul-98	563	9	1.60%
Aug-98	695	3	0.43%
Sep-98	745	2	0.27%
Oct-98	2883	6	0.21%
Nov-98	3031	13	0.43%
Dec-98			
Average			0.38%

LOUISIANA

REPORT: MAINTENANCE AVERAGE DURATION

(Receipt to Clear)

Measurement No. 1	UNE DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Mtce Hours	Number of Troubles	Mtce Avg Duration
Mar-98	8.73	2	4.37
Apr-98	25.80	1	25.80
May-98	103.78	3	34.59
Jun-98	101.23	9	11.25
Jul-98	465.17	20	23.26
Aug-98	555.23	37	15.01
Sep-98	206.15	22	9.37
Oct-98	148.50	22	6.75
Nov-98	392.50	26	15.10
Dec-98			
Average			16.17

Measurement No. 1	UNE DESIGN: NO - DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Mtce Hours	Number of Troubles	Mtce Avg Duration
Mar-98	0.00	0	0.00
Apr-98	0.00	0	0.00
May-98	86.07	1	86.07
Jun-98	38.40	2	19.20
Jul-98	0.00	0	0.00
Aug-98	33.75	14	2.41
Sep-98	45.68	5	9.14
Oct-98	93.98	3	31.33
Nov-98	0.03	1	0.03
Dec-98			
Average			16.46

LOUISIANA

REPORT: MAINTENANCE AVERAGE DURATION

(Receipt to Clear)

Measurement No. 1	UNE NON - DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Mtce Hours	Number of Troubles	Mtce Avg Duration
Mar-98	0.00	0	0.00
Apr-98	0.00	0	0.00
May-98	21.88	2	10.94
Jun-98	0.00	0	0.00
Jul-98	96.63	9	10.74
Aug-98	75.63	1	75.63
Sep-98	19.88	1	19.88
Oct-98	408.98	8	51.12
Nov-98	8.73	4	2.18
Dec-98			
Average			18.94

Measurement No. 1	UNE NON - DESIGN: NO DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	Number of Mtce Hours	Number of Troubles	Mtce Avg Duration
Mar-98	0.00	0	0.00
Apr-98	0.00	0	0.00
May-98	22.33	1	22.33
Jun-98	0.08	1	0.08
Jul-98	155.62	9	17.29
Aug-98	178.60	3	59.53
Sep-98	17.23	2	8.62
Oct-98	408.10	6	68.02
Nov-98	655.50	13	50.42
Dec-98			
Average			25.14

LOUISIANA

REPORT: PERCENT OUT OF SERVICE > 24 HOURS

(Receipt to Clear)

Measurement No. 1	UNE DESIGN: DISPATCH *		
	CLEC AGGREGATE		
REPORTING PERIOD	OOS > 24	TOTAL OOS	% OOS > 24 Hrs
Mar-98	NA	NA	NA
Apr-98	NA	NA	NA
May-98	NA	NA	NA
Jun-98	NA	NA	NA
Jul-98	6	20	30.00%
Aug-98	2	37	5.41%
Sep-98	1	22	4.55%
Oct-98	0	22	0.00%
Nov-98	6	26	23.08%
Dec-98			

Average

11.81%

* - Not measured for OOS>24 until 7/98

Measurement No. 1	UNE DESIGN: NO - DISPATCH *		
	CLEC AGGREGATE		
REPORTING PERIOD	OOS > 24	TOTAL OOS	% OOS > 24 Hrs
Mar-98	NA	NA	NA
Apr-98	NA	NA	NA
May-98	NA	NA	NA
Jun-98	NA	NA	NA
Jul-98	0	0	0.00%
Aug-98	0	14	0.00%
Sep-98	0	5	0.00%
Oct-98	1	3	33.33%
Nov-98	0	1	0.00%
Dec-98			

Average

4.35%

LOUISIANA

REPORT: PERCENT OUT OF SERVICE > 24 HOURS

(Receipt to Clear)

Measurement No. 1	UNE NON-DESIGN: DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	OOS > 24	TOTAL OOS	% OOS > 24 Hrs
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	2	0.00%
Jun-98	0	0	0.00%
Jul-98	1	5	20.00%
Aug-98	0	0	0.00%
Sep-98	0	0	0.00%
Oct-98	6	8	75.00%
Nov-98	0	4	0.00%
Dec-98			
Average			36.84%

Measurement No. 1	UNE NON-DESIGN: NO - DISPATCH		
	CLEC AGGREGATE		
REPORTING PERIOD	OOS > 24	TOTAL OOS	% OOS > 24 Hrs
Mar-98	0	0	0.00%
Apr-98	0	0	0.00%
May-98	0	1	0.00%
Jun-98	0	1	0.00%
Jul-98	0	0	0.00%
Aug-98	2	2	100.00%
Sep-98	0	1	0.00%
Oct-98	0	2	0.00%
Nov-98	3	6	50.00%
Dec-98			
Average			38.46%

BellSouth Surrogate Measurement*

Firm Order Confirmation (FOC) –Surrogate Retail Analogue*

For CLECs, an FOC is issued when a clean local service request is processed and an order is submitted and accepted in SOCS. If the request is submitted mechanically via LENS, EDI or TAG, the FOC is automatically returned to the CLEC. When the request is manual, the BST Service Representative processes the request, issues the order and sends an FOC on line via LeapFax.

BellSouth is unable to capture the history data to produce a BellSouth Surrogate Measurement for FOC today because the information is not retained permanently in our systems. BST Service Representatives use several systems (RNS - Regional Negotiation System, DOE - Direct Order Entry and SONGS - Service Order Negotiation Generating System) to input service orders which are processed through the Service Order Communication System (SOCS). The systems are currently being upgraded to capture the required information. The estimated delivery date is 2Q99. Once these system upgrades are in place and a date and time stamp can be captured, BellSouth will be able to determine when an order is initiated into one of the systems (RNS, DOE, SONGS) and when it is accepted by SOCS. This will allow a measurement to be produced that is similar to an FOC for a CLEC.

* There is no retail equivalent to a FOC. BellSouth has been directed by the LPSC to look for benchmarks useful in making comparisons and evaluating our performance in terms of non-discrimination. Pursuant to that directive, BellSouth is undertaking modifications to its retail ordering systems to record date and time stamps in the appropriate places in the systems as described in the text. When these are in place, BellSouth proposes to use them as a surrogate for the retail analogue of this measurement. In the interim, BellSouth proposes to use the average data.

Proposed BellSouth Analogs

Jeopardy Notification – New Retail Analogue*

BellSouth has been providing a manual Jeopardy Notification report each month based on a written log maintained in the LCSC for CLEC orders. This report measures the notification interval on all CLEC orders including non-mechanized that were advised of a possible jeopardy to their commitment date. A new process was implemented on December 19, 1998, which will release a notice to the CLEC when the status of an order changes. BellSouth is in the process of developing the necessary software to produce a mechanized jeopardy notification report for CLEC mechanized orders and all BellSouth orders using this new process. BellSouth will be able to measure the time between status changes in the mechanized service order and the time the notice is delivered electronically to the CLEC. This new process will also measure the same information for BellSouth orders, thus providing the necessary data for a proposed BellSouth analog report. For BellSouth retail, a report must be requested by either the Consumer group or the WMC (Work Management Center).

As indicated above, at this time BellSouth is unable to capture the history data or time stamp it on a daily basis for retail orders because the information is not retained permanently in our systems. The systems are currently being upgraded

to capture this information and time stamp it. The estimated delivery date for these system updates is 2Q99.

* There is no retail equivalent for a Jeopardy Notification Interval. BellSouth has been directed by the LPSC to look for benchmarks useful in making comparisons and evaluating our performance in terms of non-discrimination. Pursuant to that directive, BellSouth is undertaking modifications to its retail ordering systems to record date and time stamps in the appropriate places in the systems as described in the text. When these are in place, BellSouth proposes to use them as a surrogate for the retail analogue of this measurement. In the interim, BellSouth proposes to use the average data.

BellSouth Surrogate Retail Analogue for Rejects*

Reject measurements for CLECs include the percent of total orders which do not flow-through and the average reject time from receipt of service order request to the time the request was rejected. Mechanized results are based on actual data for all orders from the Operating Support Systems (OSS). During the Negotiation Process for BST Retail services, service representatives input the data into the Regional Negotiation System (RNS). BST service representatives do not have a Pre-Ordering process to validate information prior to issuance of an order into RNS. The actual negotiation of the order includes validation of information as the order is processed through the legacy systems. There are edits and queries built into the legacy systems as they are accessed so that invalid and / or incorrect information is not accepted on the service order. The data is edited on line and those types of queries are resolved immediately. When the negotiation process is complete, the order is generated and the data released to Service Order Communication System (SOCS). When SOCS receives the data it becomes a service order and an order number is assigned. At this point, the service order is edited by Service Order Error Resolution (SOER) before it flows to downstream systems for provisioning. Should an error occur at this point in the process, it would not flow downstream for provisioning. This could be considered a surrogate analog measurement for Rejects. At this time we are unable to capture the data on a daily basis to provide this measurement for BST. Estimated delivery date is 2Q99.

* There is no retail equivalent to a FOC. BellSouth has been directed by the LPSC to look for benchmarks useful in making comparisons and evaluating our performance in terms of non-discrimination. Pursuant to that directive, BellSouth is undertaking modifications to its retail ordering systems to record date and time stamps in the appropriate places in the systems as described in the text. When these are in place, BellSouth proposes to use them as a surrogate for the retail analogue of this measurement. In the interim, BellSouth proposes to use the average data.

Proposed BellSouth Analog*

Average Completion Notice Interval – Surrogate Retail Analogue

CLECs that subscribe to and use the Electronic Systems currently receive completion notices for their service orders. The completion notice interval is the time from when a service order is completed by either a field technician, dispatch assistant, or by electronic processes, until the completion notice is sent electronically to the CLEC. For BellSouth service orders, the systems are electronically updated to post the order as complete. The proposed surrogate for a retail analogue will measure the time from when the service order is completed until these systems are updated to show the order as complete.

At this time BellSouth is unable to capture the history data or time stamp on a daily basis for retail orders because the information is not retained permanently in our systems. The systems are currently being upgraded to capture this information and add a time stamp. The estimated delivery date for these system updates is 2Q99.

* There is no retail equivalent for a Completion Notice Interval. BellSouth has been directed by the LPSC to look for benchmarks useful in making comparisons and evaluating our performance in terms of non-discrimination. Pursuant to that directive, BellSouth is undertaking modifications to its retail ordering systems to record date and time stamps in the appropriate places in the systems as described in the text. When these are in place, BellSouth proposes to use them as a surrogate for the retail analogue of this measurement. In the interim, BellSouth proposes to use the average data.

UNE PROVISIONING TARGET INTERVALS

The UNE product teams provide the development process for the UNE Provisioning Target intervals. The product teams are comprised of subject matter experts representing all aspects of the BellSouth provisioning processes. The product teams analyze the specified UNE product or service with the associated attributes to develop the ordering and provisioning processes. The team also develops a Technical Service Description (TSD) associated with each product. The TSD identifies the technical requirements necessary to provide the UNE service to the CLEC. From this data the product team SME's develops the provisioning processes and performs end to end provisioning process testing. The UNE service intervals are determined by each team based on the developed UNE provisioning processes and the results of the end to end testing. The product teams will also compare existing process intervals for similar services, where possible, to assist in determining a deliverable product or service interval. The Product Manager and team approve the product processes and the service is made available for service to CLEC customers. The UNE provisioning target intervals are then documented in the BellSouth Products and Services Interval Guide on the BellSouth Interconnection WEB site.

BellSouth Products and Services Interval Guide Recommended UNE Provisioning Parameters			
UNE	Quantity	Interval	FOC
UNBUNDLED LOOPS			
2 Wire analog voice grade loop (SL1 & SL2)	1 - 5	7	2
	6 - 14	10	3
	15 +	ICB	
4 Wire analog voice grade loop	1 - 5	7	2
	6 - 14	10	3
	15 +	ICB	
4 Wire DS1 & PRI digital loop	1 - 5	7	2
	6 - 14	10	3
	15 +	ICB	
2 Wire ISDN digital loop	1 - 5	7	2
	6 - 14	10	2
	15 +	ICB	
4 Wire 56 or 64 Kbps digital loop	1-5	7	2
	6-14	10	3
	15+	ICB	
ADSL - 2 Wire asymmetrical digital subscriber line loop*	1 - 5	7	2
	6 - 14	10	3
	15+	ICB	
HDSL - 2 wire & 4 wire high bit rate digital subscriber line loop*	1 - 5	7	2
	6 - 14	10	3
	15+	ICB	
LOOP CONCENTRATION (Inside Plant)			
Loop channelization system*	1	90	15
Central Office Channel Interfaces 2Wire	1	30	7
Central Office Channel Interfaces 4 Wire	1	30	7
SUB LOOPS (Outside Plant)			
Loop Feeder	1	30	7
Loop Concentration (dependent on equipment and right of way)*	1	30-90	15
NETWORK INTERFACE DEVICE (NID)			
NID TO NID Cross Connect 2 wire	1 - 14	7	2
	15 +	ICB	
NID To NID Cross Connect 4 wire	1 - 14	7	2
	15 +	ICB	2
NID Spare Capacity	1 - 14	7	2
	15 +	ICB	
OPEN AIN (OAIN)			
OAIN tool kit	1	45	10
OAIN service management system	1	45	10
CCS7 SIGNALING TRANSPORT SERVICE			
A-Link Signaling	1	60	12
D-Link Signaling	1	60	12
STP - Signaling Transfer Point	1	60	12
UNBUNDLED INTEROFFICE TRANSPORT			
Interoffice Transport Analog line grade	1	30	7
Interoffice Transport DSO	1	30	7
Interoffice Transport DS1	1	30	7
Interoffice Transport DS3	1	30	7
Dedicated 2 wire voice grade	1	30	7
Dedicated 4 wire voice grade	1	30	7
Local channel dedicated DS1	1	30	7
Dark Fiber		ICB	NA
O/S AND DA UNES			
Operator Call Processing - OPCH, FACH, BLV, EI, ECT	1	30	7
Operator Call Processing - Facility Based OPCH, FACH, ECT	1	30	7
Operator Call Processing - Facility Based BLV, EI	1	30	7
Answer Operator Services	1	30	7
Directory Assistance Access Service (DAAS)	1	30	7
Directory Assistance Call Completion (DACC)	1	30	7

BellSouth Products and Services Interval Guided Recommended UNE Provisioning Target Installation			
UNE	Quantity	Interval	FOC
Directory Assistance Number Services Intercept (DANSI)	1	30	7
Directory Assistance Transport	1	30	7
Directory Assistance Database Service (DADS)	1	30	7
Direct Access to DA service (DADAS)	1	30	7
CUSTOMIZED CALL ROUTING (Selective Routing - LCC)			
1 - 5 LCC	1 - 5	30	7
6 - 25 LCC	6 - 25	60	15
> 25 LCC	25 +	ICB	

BellSouth Products and Services Interval Guidelines Recommended UNE Provisioning Target Installation			
UNE	Quantity	Interval	FOC
UNBUNDLED LOCAL SWITCHING			
2 Wire analog line port	1 - 10	3	2
	11 - 25	4	2
	25 +	ICB	
Hunting	1	5	2
2 Wire analog DID trunk port	1 - 10	5	2
	11 - 25	6	2
	25 +	ICB	
2 Wire ISDN digital line side port	1 - 10	5	2
	11 - 25	6	2
	25 +	ICB	
4 Wire ISDN DSI digital trunk port	1 - 10	5	2
	11 - 25	6	2
	25 +	ICB	
Switching functionality	1	5	2
Unbundled Local Usage (entire local calling area)	1	5	2
UNBUNDLED ACCESS TO OSS			
Preorder	1	30	7
Order/Provisioning	1	30	7
Maintenance/repair	1	30	7
ACCESS TO DATABASES			
800 Database	1	10	3
Line Information Database (LIDB)	1	30	7
INTERIM NUMBER PORTABILITY			
RCF - Remote Call Forwarding	1 - 25	5**	2
	26 - 50	7	2
	51 +	ICB	
DID - Direct Inward Dial			
Initial request - trunk group to be established	Initial	30	7
Subsequent request - trunk group in place	1 - 100	5	2
	100+	ICB	
LOCAL NUMBER PORTABILITY	1-50	5**	1-2*** or Varies****
	51+	ICB	
PHYSICAL COLLOCATION			
Ordinary	1-5	120	NA
	6+	ICB	NA
Extraordinary	1-5	180	NA
	6+	ICB	NA
VIRTUAL COLLOCATION			
Ordinary	1-5	90	NA
	6+	ICB	NA
Extraordinary	1-5	120	NA
	6+	ICB	NA

* Service Inquiry Required

** For complex services the targeted installation interval is 7

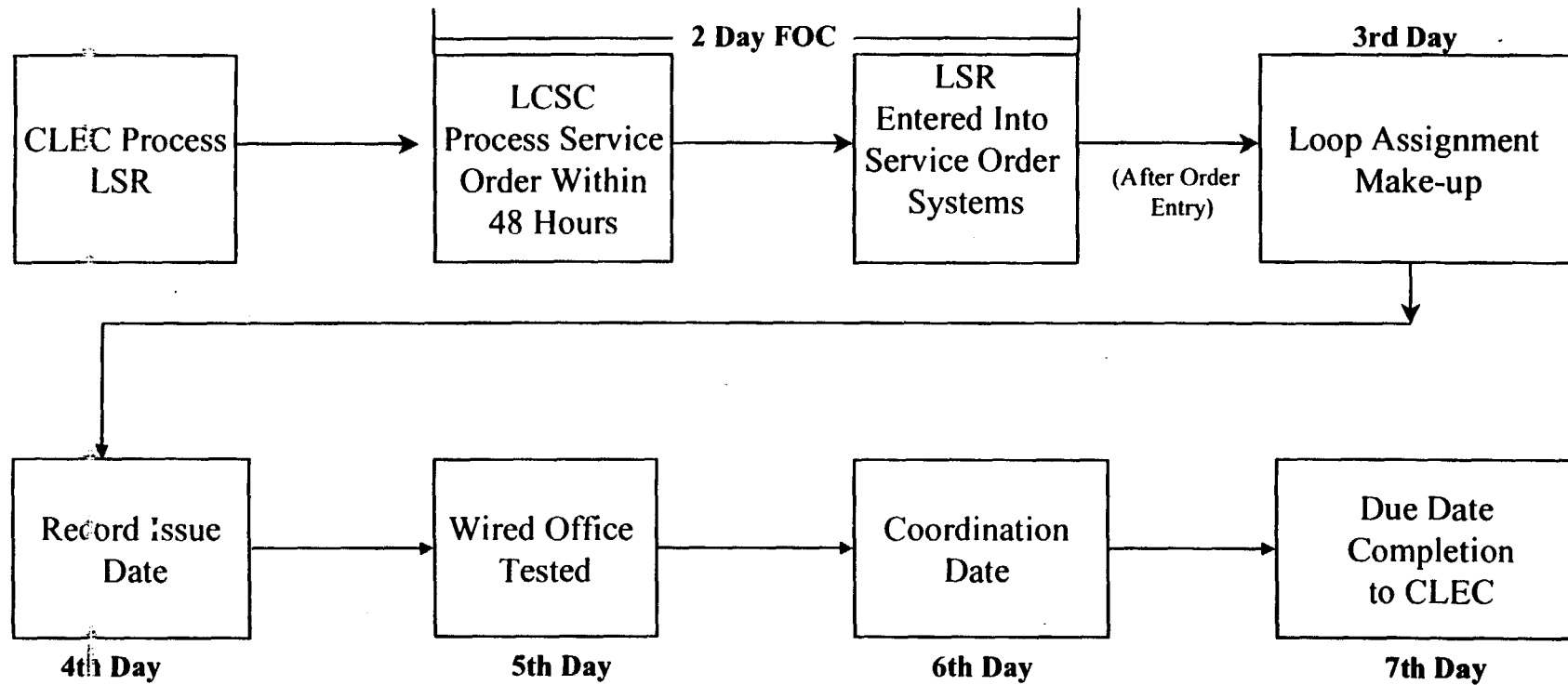
*** 24 hours assumes receipt of a clean, electronic, and accurate order for POTS and 48 hours assumes manual receipt of POTS

****For complex service, the FOC is the same as the FOC interval for the service being disconnected.

Additional Products/services

Changes to original

Unbundled Voice Loop Order/Provisioning Process



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ISSUE B

June 1998



Unbundled Local Loop Technical Specifications

Technical
Reference

TR73600
ISSUE B

NOTICE

This Technical Reference describes Unbundled Local Loops provided by BellSouth Telecommunications (BST), Inc. An Unbundled Local Loop provides a transmission path between a BST central office and an end-user location. This document describes the signals as they appear at the associated interfaces. It also describes some aspects of the performance of the channel.

BST reserves the right to revise this document for any reason, including but not limited to, conformity with standards promulgated by various governmental or regulatory agencies, utilization of advances in the state of the technical arts, or the reflection of changes in the design of any equipment, techniques, or procedures described or referred to herein. Liability to anyone arising out of use or reliance upon any information set forth herein is expressly disclaimed, and no representations or warranties, expressed or implied, are made with respect to the accuracy or utility of any information set forth herein.

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Nothing contained herein shall be construed as conferring by implication, estoppel or otherwise, any license or right under any patent, whether or not the use of any information herein necessarily employs an invention of any existing or later issued patent.

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TR 73600

UNBUNDLED LOCAL LOOP – TECHNICAL SPECIFICATIONS

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UNBUNDLED LOCAL LOOP - TECHNICAL SPECIFICATIONS

1. General

1.1 Scope

This document provides the technical specifications for the Unbundled Local Loops offered by BellSouth Telecommunications (BST). Unbundled Local Loops enables an Competitive Local Exchange Carrier (CLEC) to provide services to an end-user location. While Unbundled Local Loops supporting a wide variety of signaling schemes are available, the widespread use of Digital Loop Carrier (DLC) in the BST network requires that a particular signaling scheme be specified when an Unbundled Local Loop is ordered.

1.2 Availability

Unbundled Local Loops are provided subject to availability on a first-come first-served basis.

1.3 Revisions

This revision is issued to : (1) change the name of Analog Unbundled Loop with Specified Signaling to Designed Unbundled Voice Loop, (2) provide updated information on Asymmetric Digital Subscriber Line (ADSL) applications on Basic Unbundled Loops, (3) remove footnote which suggests that BST transmission equipment will be included to maintain a specified loss on long Designed Unbundled Voice Loops, (4) add footnote which specifies that insertion loss on voice loops may be as high as 15dB, and (5) update power spectral density limits for Digital Unbundled Loops which support High-Bit-Rate Digital Subscriber Line (HDSL) Transport.

2. References

The following documents are referenced:

- (1) ANSI T1.401-1993, *Telecommunications — Interface Between Carriers and Customer Installations — Analog Voicegrade Switched Access Lines Using Loop-Start and Ground-Start Signaling*
- (2) ANSI T1.405-1996, *Telecommunications — Interface Between Carriers and Customer Installation Interfaces, Direct-Inward-Dialing Analog Voicegrade Switched Access Using Loop Reverse-Battery Signaling*
- (3) ANSI T1.407-1990, *Telecommunications — Interface Between Carriers and Customer Installations — Analog Voicegrade Special Access Lines Using Customer-Installation-Provided Loop-Start Supervision*
- (4) ANSI T1.410-1992, *Telecommunications — Carrier-to-Customer Metallic Interface — Digital Data at 64 kbit/s and Subrates*
- (5) ANSI T1.413 - 1995, *Telecommunications — Network and Customer Installation Interfaces — Asymmetric Digital Subscriber Line (ADSL) Metallic Interface*

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- (6) ANSI T1.601-1992, Telecommunications — ISDN Basic Access Interface for use on Metallic Loops for Application on the Network Side of the NT
- (7) ANSI/IEEE 455-1985, *Standard Test Procedure for Measuring Longitudinal Balance of Telephone Equipment Operating in the Voice Band*
- (8) ANSI/IEEE 743-1995, *Standard Equipment Requirements and Measurement Techniques for Analog Transmission Parameters for Telecommunications*
- (9) Committee T1 Technical Report No. 28, A Technical Report on High-Bit-Rate Digital Subscriber Lines
- (10) Bellcore TA-TSY-000077, Digital Channel Banks - Requirements for Dataport Channel Unit Functions
- (11) Bellcore SR-TSV-002275, BOC Notes on the LEC Networks - 1994

3. Overview**3.1 Loop Topology**

Unbundled Local Loops extend from the Main Distributing Frame (MDF) in BST's Central Office (CO) to the End User Interface. They may be composed in either of the following arrangements:

- entirely of paired metallic conductors, or
- the concatenation of a universal DLC channel with paired metallic conductors.

3.2 Digital Loop Carrier

The use of DLC brings up the following two considerations.

- Some technologies, such as High Bit-rate Digital Subscriber Line (HDSL), cannot be transported via DLC due to the bandwidth employed. When a customer is served by DLC, an Unbundled Local Loop providing such a wide bandwidth will not typically be available.
- Many dedicated voiceband circuits employ signaling that requires unique DLC line cards.

3.3 Inductive Loading

Of the loops employing only metallic facilities, a significant percentage are loaded. Loading involves the placement of inductors, typically every 6000 feet, in the loop. These inductors introduce intolerable attenuation at frequencies above the voiceband, again making wide bandwidth services unavailable.

3.4 Types of Unbundled Local Loops

Due to the above considerations, a number of types of Unbundled Local Loops have been developed in order to simplify the ordering and provisioning process. The different types of loops can be placed into the following categories:

- Basic Unbundled Loop
- Designed Unbundled Voice Loop
- Digital Unbundled Loop

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The most prevalent means of voiceband exchange access involves a loop-start interface, with the exchange carrier providing the battery feed. Because this arrangement is widely used, Unbundled Local Loops supporting such signaling have been assigned a unique category, denoted the Basic Unbundled Loop.

A Designed Unbundled Voice Loop provides a two-wire or four-wire voiceband transmission channel with various signaling options.

The Digital Unbundled Loop provides a channel that can support one of a described set of digital transmission schemes.

3.5 Interfaces

Unbundled Local Loops are available with two-wire and four-wire interfaces, depending on the particular type. The same number of wires will be provided at both the MDF and the End User Interface. For two-wire interfaces, one conductor is denoted Tip and the other is denoted Ring. For four-wire interfaces, the conductors of one pair are denoted Tip and Ring, the conductors of the other pair are denoted Tip 1 and Ring 1.

The interface at the MDF is not accessible by the CLEC. Instead, it is connected to other BST unbundled elements, or it is connected – via tie cabling – to collocated CLEC equipment. The tie cabling is not part of the unbundled loop.

3.6 CLEC Equipment Requirements

In addition to applicable FCC, NEC, and UL requirements and orders, CLEC equipment shall also meet the following requirements:

- The dc voltage applied to either conductor shall be negative with respect to ground
- The open-circuit dc voltage applied to any conductor shall be less than 80 Vdc when measured to ground or any other conductor.
- The power delivered to a load via BST facilities shall not exceed 2.5 watts.
- The current provided, via BST facilities, shall not exceed 150 mA.

3.7 Right to Disconnect

BST reserves the right to disconnect a service or equipment connected to an unbundled local loop that either: (a) fails to meet these requirements, or (b) is shown to be causing harm to other services or systems.

4. Basic Unbundled Loop**4.1 General**

This loop provides a voice grade transmission channel suitable for loop-start signaling and the transport of analog voice grade signals. This loop is typically used to provide switched access telephone service.

This loop provides loop-start signaling, arranged for battery-feed by the CLEC and loop closure by the end-user. This loop is only available via a 2-wire interface.

**TR 73600
Issue B****4.2 Signaling Requirements**

In practically all cases employing metallic facilities, the loop resistance (the sum of the resistance of both tip and ring) is less than 1500 Ω .

In those cases where loop resistance exceeds 1500 Ω , it will never exceed 2800 Ω . In these cases, BST cannot meet the prescribed signaling requirements at the End User Interface unless the CLEC provides sufficient voltage at the office end of the circuit. The open circuit tip-to-ring dc voltage provided by the CLEC equipment shall be less than 80 Vdc.

Except for this potentially greater loop resistance, the requirements in 6.2 apply to the Basic Unbundled Loop.

4.3 Transmission Requirements

In those rare cases where the loop resistance exceeds 1500 Ω , the insertion loss at 1 kHz, measured with a 900 Ω termination at the MDF and a 600 Ω termination at the End User Interface will never exceed 15 dB. Except for this potentially greater loop loss, the transmission requirements of Section 7 apply to the Basic Unbundled Loop.

4.4 Signal Power Requirements

The signal power requirements for the Designed Unbundled Voice Loop, with the loop-start option, apply to the Basic Unbundled Loop.

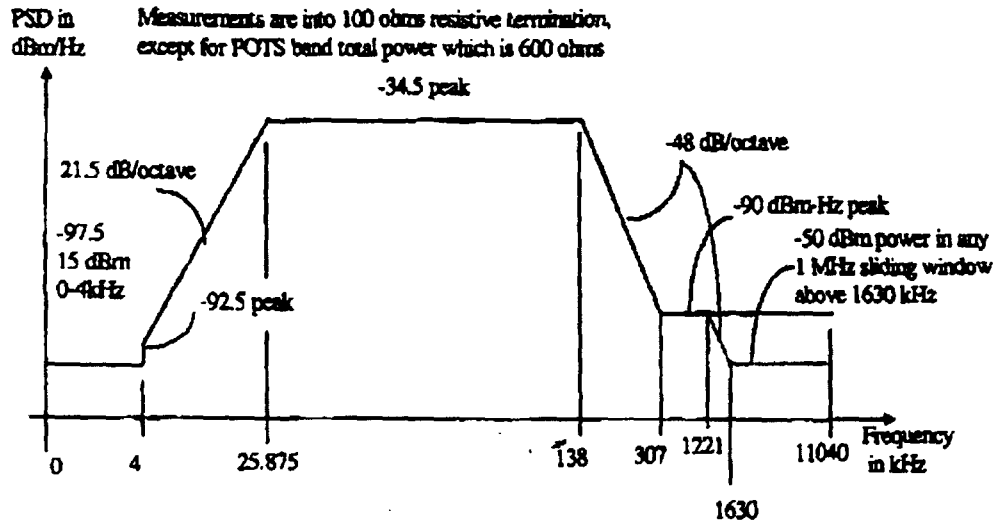
4.5 Asymmetric Digital Subscriber Line

On some Basic Unbundled Loops the CLEC may employ Asymmetric Digital Subscriber Line (ADSL) technology to provide Data Over Voice service. This option is not available when DLC is a part of the Basic Unbundled Loop facility. In addition, due to stringent transmission requirements, this option may not be available on many metallic loops. Variation in vendor implementations of ADSL technology and expected data rates preclude BST from specifying those loops which will support ADSL. However, Section 8.4.3 transmission requirements associated with High-Bit-Rate Digital Subscriber Lines (HDSLs) can be considered broad loop screening criteria for potential ADSL applications.

If ADSL is employed, crosstalk into other cable facilities is a concern. Accordingly, the CLEC is responsible for limiting the Power Spectral Density (PSD) of the signal transmitted at both the End User interface and at the MDF interface. The following requirements shall be met to minimize interference to other systems:

- The "downstream" data path, as defined in ANSI T1.413, shall be in the MDF-to-NI direction.
- The "upstream" data path shall be in the NI-to-MDF direction
- The PSD shall be limited to that specified in Figures 1 and 2.¹

¹ These limits will soon become a part of ANSI T1.413.

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Issue B
Upstream Transmitter spectrum


Note: The breakpoint frequencies and values are exact; the indicated slopes are approximate

Note: The power in a 1 MHz sliding window is measured in 1 MHz bandwidth starting at the measurement frequency

FREQUENCY BAND, kHz	EQUATION FOR LINE, dBm/Hertz
0 - 4	-97.5, +15 dBm 0-4 kHz
>4 - 25.875	$-92.5 + 21.5 \cdot \log(f/4)/\log(2)$
25.875 - 138	-34.5
138 - 307	$-34.5 - 48 \cdot \log(f/138)/\log(2)$
307 - 1221	-90
1221 - 1630	$-90 - 48 \cdot \log(f/1221)/\log(2)$
1630 - 11040	-90, with -50 dBm power in any 1 MHz sliding window above 1630 kHz

Figure 1 – Upstream Transmitter spectrum
(ADSL Applications)